

Naiyawat Sukthang 2007: Design of Rice Bran Heat - Treatment Device for Storages.
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By designing and constructed a rice bran heat - treatment device comprises of 2 shells cylinder. The inner shell was installed with electric heating coil 1500 W and the outer shell drum could load rice bran capacity volume up to 13 litres. The drum can be rotated by transmitting power from belt through 25 W - AC motor. Experiments yielded suitable load for operation was 4 kg with revolution speed of 30 rpm. The effects of rice bran heat - treatment to lipase enzyme activity can be reduced. The best condition in heat - treatment was 200° C for 60 minutes of which the temperature of rice bran rose to 84.4° C with moisture content 3.3% and lipase enzyme activity only 1% hydrolysis. The effect of rice bran heat - treatment to the quality change during storages was studied by taking heat rice bran at 200° C for 60 minutes packed in polyethylene bag 2 layers, aluminum foil bag under vacuum and control sample raw rice bran packed in sack and stored in room temperature and in refrigerator. The sample was analyzed about the increase of free fatty acid (FFA) through 16 weeks. It was found that the increase of FFA was in a decreasing rate during storage for the whole 16 weeks. Raw rice bran packed in sack yielded increment of FFA up to 74.9% and 51.7% stored in room temperature and refrigerator respectively and rice bran packed in polyethylene bag 2 layers yielded increment of FFA up to 54.0 and 26.3% stored in room temperature and refrigerator respectively. For best type of packaging is aluminum foil bag under vacuum pack yielded increment of FFA up to 19.4% only.

Student's signature

Thesis Advisor's signature

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